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ABSTRACT

This document summarizes the evaluation of a project that studied social, physical, and academic stress in the lives of students in an inner-city intermediate school and developed interventions to reduce that stress. Over 242 students, most of whom were from low-income families and almost all of whom were black, participated in the project. The following findings are reported: (1) a committee of parents, teachers, administrators, and project staff approved all research instruments and made recommendations for interventions; (2) the average frequency of stressor events did not change from year to year; (3) high internal consistency was established for four of the five subscales of a project-developed instrument to measure the perceived frequency of stressor events and anticipated reactions to those events; (4) student coping processes were positively related to achievement and the context in which the stressor events occurred, and external locus of control was related to low self-esteem and low achievement; (5) locus of control and the appraisal of stressor events were central to students' cognitions, feelings, and actions; and (6) effective interventions cannot be developed without the active and sustained support of school administration and teachers, many of whom believed that stressor events were beyond control. (FMW)

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PROJECT ON ACADEMIC STRIVING

The Moderation of Stress in the Lives of the Students of
an Urban Intermediate School: A Project to Coordinate
Research and Environmental Intervention

FINAL REPORT TO THE WILLIAM T. GRANT FOUNDATION

EXECUTIVE SUMMARY

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Introduction

In recent years a great deal of research and in-service training has focused on teachers' stress. However, very little attention has been paid to the stress of students, except research on test anxiety and school phobia. This project set out to explore in an intensive way students' experience of social, physical, and academic stressors in a school environment. The project was located in an intermediate school because prior research had pointed to early adolescence as a stage of life when confrontation with the stressors of adult life is markedly increased, at the same time that the social supports of childhood may still be needed.

In June, 1982, The William T. Grant Foundation gave a one-year planning grant to the Public Education Association for refinement of the design of a project to coordinate research and environmental intervention on stress in the lives of students in an inner-city school. The foundation awarded a three-year grant to carry out the project in November, 1983.

The results of the planning year and the first subsequent school year have been described in earlier reports. This report will cover the activities of the final two years of the project as well as present an integration of the results

from the four years' effort. Ongoing research which has followed the last cohort of project students into their high school years will be presented in a later report.

The host school had a total enrollment of about 500 students, most of whom came from low-income families. Almost all of the students were American-born blacks. About half of the school staff and the project staff were also black.

Over the course of the three and a half years in the intermediate school, 242 students were officially enrolled in the project. Two successive cohorts of students participated from the sixth through the eighth grades and a third cohort in the seventh and eighth grades. In addition, many other students were included in project activities, as the project worked with whole classes and with the general faculty and administration of the school on numerous occasions.

Project objectives and results

The first objective of the project was to develop a process of planning and approval with staff and parents of the host school that respected the needs and competencies of all of the parties and that optimally facilitated both the research and interventions linked with the research. The project created a Human Rights Committee, composed of

parents, teachers, administrators, and senior project staff. The committee met regularly to approve all project instruments and data collections, receive nonconfidential feedback from these sources, and make recommendations for interventions in the school. By all accounts, the committee was highly instructive and satisfying to its participants and initiated a number of actions in the school. However, the committee's influence was limited because it did not have an official role in the government of the school. More generally, the research and intervention roles of project staff were not always compatible, particularly as one or the other role required a greater investment of project time. Notwithstanding, project staff became increasingly forthright with their views of how conditions in the school needed to change to promote students' learning and morale.

The project's second objective was to reduce the incidence of potentially stressful events students and teachers experienced in the school, to levels more compatible with the students' achievement and positive morale. Both observation by project staff and findings from instruments indicate that stress continued at high levels throughout the duration of the project. Individual students and teachers received support from project staff and the project was repeatedly commended for this support. The project helped students and staff deal with numerous crises. About a sixth of the teachers participated regularly in project meetings

and carried out project activities with their classes. Nonetheless, the average frequency of stressor events reported by students did not change from year to year. Stress originated and played itself out at all levels of the school as a social system, with the stressors at one level, for example in the classroom, being compounded by stressors at other levels, including the school administration, the district, the neighborhood, and students' homes.

Stressor events were not found to be less frequent at one time of the school year than another and the higher tracked classes were just as liable to perceive high frequencies of stressor events as the lower tracked classes. Persistent negative conditions in the school gnawed away at security and order, while seasonal events such as the distribution of report cards ingendered stress. Intermittent personal attacks or insults, from peers as much as from teachers, added to students' individual distress. The stress in the school was not just a reflection of stress in the home, but flowed directly from the school staff's fitful exercise of control, arbitrariness, lack of communication, and distrust, at both the school and the district level.

The project's third objective was to establish validity and reliability for an instrument to measure students' experience of stress and social support in the school. The accomplishment of this objective was essential to

delineating the parameters of students' stress. Originally called the Academic Environment Inventory, and later renamed Things That Happen In School (THIS), the instrument, created by the project, measures both the perceived frequency of different events and anticipated reactions to or appraisals of the events when they happen -- how upset, or good, one would feel if an event happened. High internal consistency was found for the four principal subscales of the instrument: Stressor Frequency, Stressor Appraisal, Support Frequency, and Support Appraisal. Students distinguished meaningfully between different kinds of events within each of the principal subscales. They reported general school disruption to be occurring more often than academic trouble, which in turn they perceived happening more often than physical assaults. Students appraised (reacted to) physical attacks more negatively than assaults on safety and integrity or academic trouble. They perceived help and friendship to be occurring less often than encouragement, verbal support, or general support from people. However, their appraisals were virtually the same for friendship and help, encouragement, and people support.

Project and nonproject students, and boys and girls, tended to agree on the relative frequencies of different stressor events. On the average, they agreed also on their appraisals of which events were most or least upsetting. Boys, however, tended to say they got less upset by stressor

events than did the girls. Furthermore, boys appraised stressor events as less upsetting in the seventh and eighth grade than in the sixth grade, perhaps in line with an expectation that boys would become tougher at that stage of their development. These and other findings to be indicated below suggested that the stressor subscales of the instrument Things That Happen In School have strong validity. The social support subscales of THIS have been less productive so far, although the one time the project administered the instrument in another school, the levels of social support appraisal and frequency distinguished the responses of the host and comparison schools in line with staff observations.

The project's fourth objective was to examine the coping processes of students whose locus of control was relatively internal or external. The project carried out special studies that focused on students' coping processes and locus of control in greater depth.

Students' coping processes were first measured using Tero and Connell's Academic Coping Inventory which yields four dimensions of children's coping in response to an academic stressor: positive coping, projection (blaming others), denial (avoiding or devaluing the outcome) and non-coping, anxiety-enhancing behaviors. Positive coping was found to be weakly related to academic achievement, projection was

strongly (and negatively) related to academic achievement only for boys who were better readers, and denial was weakly and negatively related to academic achievement. The defensive coping styles were weakly and negatively related to appraisal of stress. Projection and non-coping were positively related to perception of stressor frequency. Girls who reported more projection and denial also had lower school, home and general self-esteem; their self-esteem was also positively related to positive coping. For boys, projection and non-coping were more weakly related to lower school self-esteem. For both boys and girls, there was an association between school self-esteem and academic achievement; but for boys only there was no association between general self-esteem and academic achievement. One noted also the particular vulnerability of bright black boys who (like white girls in other studies) apparently suffer because of the conflict between achievement and popularity.

From additional data gathered in one-to-one interviews with a subsample of the students, it was found that context influenced coping styles. Students reported more defensive coping in stressful social situations than in stressful academic ones, with boys using more denial in social situations than girls. This more denying, disengaged response probably relates to the findings reported earlier of boys' lower stressor appraisal scores. Further, most of the students reported making at least one positive-coping

self-statement in the stressful academic situations while only a quarter reported such statements in the stressful social situations. Less than a quarter of the stressful events mentioned in the interview were academic; stresses in the lunchroom and peers not cooperating or being disrespectful were each mentioned by over a third of the students. The question of control is relevant here; 87% of the students felt they could make changes in the stressful academic situation compared with 49% in the stressful social situation.

Another analysis which compared interview responses with teachers' rating showed strong correlations between teachers' ratings of positive academic coping and feeling good about oneself and social efficacy in stressful social situations for boys but not for girls. Next, how students assessed their peers in the sixth grade was compared with how students saw themselves in the seventh and eighth grades and how they were assessed by teachers. For both boys and girls considered disruptive by peers, there were negative correlations with teachers' assessments of positive social coping; there were also strong negative correlations between peer assessment of disruptiveness in the sixth grade and final grade point average in the eighth grade for both boys and girls.

In another special study, locus of control was measured

using two instruments, the familiar Nowicki-Strickland Children's Scale and the relatively new Connell Locus of Control Scale. The Connell Scale measures locus in four domains: cognitive, social, physical, and general; it has items to attribute control to the self, or internal forces, to powerful others, and to unknown forces; and it distinguishes between control of success and control of failure events. In analyses with the Connell Scale, the unknown dimension had the most relationships to achievement outcomes, powerful others the next most relationships, and internal control the fewest relationships. The more uncertain the students felt about the control of social relations in the classroom, or the more they could not figure out why they did or did not get good grades, the lower their grades and standardized test scores were found to be. Similarly, students not knowing the causes for situations occurring in various areas of their lives correlated with their feeling less acceptable at school and at home as well as with their peers. These associations between uncertainty of control, lower self-esteem, and lower achievement occurred more in attributions for successes than for failures. The associations occurred in both the social and the cognitive domain, but figured more strongly in the social domain for boys and in the cognitive domain for girls. The results tended to confirm other project findings that demonstrated the importance of students' managing

interactions with peers and teachers in order to survive socially and academically in the school, and the existence of different role expectations for boys and girls in this process. The finding that unknown attribution was even more negatively related to achievement and self-esteem than external attribution may reflect the discrepancy that black students experience between their attainment levels and their ability or effort.

A fifth objective was to explore the interrelationships among all of the variables measured for this research -- perceptions of stressors and social supports in the academic environment, locus of control, self-esteem, test anxiety, nonspecific distress, and school attendance and academic achievement -- to formulate hypotheses for subsequent research contributing to the causal modeling of these variables. Several modifications of this objective proved necessary. Due to the large number of instruments being given in whole class situations, the test anxiety scale was administered only once. Attendance was recorded very unevenly by teachers from class to class and year to year. Therefore, test anxiety and attendance were eliminated from the analysis. Because of additional studies on students' coping processes, including a teacher rating scale, these dimensions were added to the exploration of interrelationships.

The major analyses of the impact of stress indicated that students who perceived stressor events happening more frequently had lower grades and self-esteem, reported more distress symptoms, felt less in control, and had higher projection and negative coping scores. These findings were in line with project staff's expectations. On the other hand, students who said that stressor events were more upsetting had higher grades and teacher ratings. This unanticipated finding led to the consideration of this variable as an appraisal of events that got in the way of achievement, or valuing, which usually proved beneficial. An exception was when students also reported more frequent stressor events, in which case more distress was also reported.

In carrying out the fifth objective, the project modified an existing instrument to measure students' symptoms of distress. An analysis of responses to the resulting instrument found three factors: depression symptoms, psychosomatic symptoms, and illness symptoms. While distress was related positively to not-internal control, stressor frequency, projection, and negative coping, it was correlated neither with grades nor with self-esteem. Distress thus emerged as an outcome independent of grades and self-esteem as outcomes. The frequency of stressor events correlated most strongly with the depression symptoms subscale of the distress instrument and least strongly with

the illness symptoms subscale. Students whose locus of control was more external experienced more stressor events and manifested a higher correlation between distress and stressor frequency than students whose locus was more internal.

When these and a number of other findings were rendered on a general scheme, it became apparent that locus of control, or attribution, and the appraisal of stressor events were each central to subsystems of the students' cognitions, feelings, and actions. Both connected directly to teacher behavior ratings and grades, but they functioned differently for students who were relatively internal or external. This then points to both attribution and appraisal as areas in which to work with students to reduce the negative impact of stressor events on students' achievement and well-being.

Different patterns emerged for boys and girls. First, boys' grades were substantially lower than girls', despite the fact that their reading and math test scores were not significantly different. Also, the boys appraised stressor events as less upsetting than did the girls. This suggests that the boys generally were less cognizant of the impact stressor events could have on their well-being, or that they denied or devalued this impact, or that they disengaged from the school environment as a way of coping and maintaining their self-esteem. The boys who achieved higher grades did

appraise stressor events more negatively. For these higher achieving boys, there was also a strong correlation between the frequency of stressor events and self-reported distress, a correlation that obtained more generally for the girls. In short, boys with higher grades had certain affective orientations in common with the girls, compared to boys with lower grades. Observations added to a picture of boys with higher grades appearing to be more androgynous than boys with lower grades.

Case studies of individual students revealed a far-reaching consistency between the behavior of a given student as portrayed by observations and interviews and the student's scores on the various measures obtained by the project. Each student emerged as a unique person, not least in his or her way of responding to stressor events.

The project's last objective was to evaluate the impact of the intervention on students' perceptions of stressors and social supports in the academic environment, their locus of control, peer and school self-esteem, nonspecific stress, and school attendance and achievement. Again, we have concluded both from analyses of instrument data and from observations that our long-term impact was very slight, despite many specific occasions when students and staff seemed to have gained relief and learning from project activities. Students' locus of control did become more

internal between sixth and seventh grade, but this appeared to be more an effect of development than of project activity. Project staff became increasingly aware during the course of the research that the question of control over stressor events needed to be addressed, but that it could not be pursued validly with the students so long as even the adults in the environment felt that things that happened in school were beyond their control. A major intervention could not succeed without the active and sustained support of the school administration and faculty.

The congruence of findings in this one school with what has been found in earlier studies with the same or similar methods strengthens the likelihood that the more original findings of the project with respect to school stress itself are also valid. While some of the findings are specific to this particular school or sample, project staff were struck by the resemblance of how the students responded to our instruments and actions and how we think children generally would respond, or children as we have known them in other contexts. This both encourages us to believe that ways could be found to ameliorate the school situation and underscores the failure of the school to provide an environment that was not only secure and supportive of children's academic and social development but that also enabled students to feel some measure of control and responsibility.